

Section 2

Skill Building: Using the Geographer's Tools

READ TO DISCOVER

1. How do geographers and mapmakers organize our world?
2. What kinds of special maps do geographers use?
3. How do geographers use climate graphs and population pyramids?

WHY IT MATTERS

News reporters often use maps to identify the locations of important events. Use CNNfyi.com or other **current events** sources to find out how maps are used in specific news stories.

DEFINE

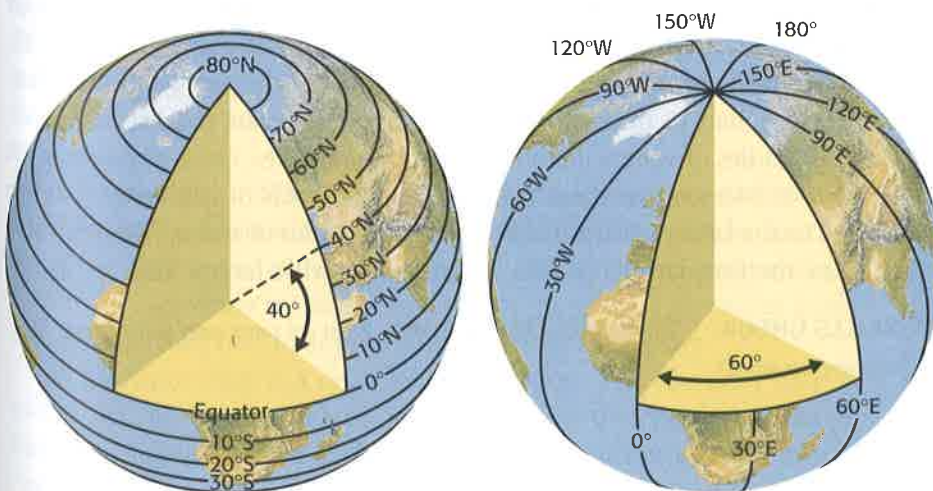
grid
latitude
longitude
equator
parallels
meridians
prime meridian
degrees
hemispheres
continents

atlas
map projections
great-circle route
compass rose
legend
contiguous
precipitation
topography
climate graphs
population pyramids

Organizing the Globe

We begin our study of geography by looking at a globe. A globe is a scale model of Earth. It is useful for looking at the whole planet or at large areas of its land and water surface. One of the first things you will notice on the globe on this page is a pattern of lines. These lines circle the globe in east-west and north-south directions. This pattern is called a **grid**. The grid is made up of lines of **latitude** and **longitude**. Lines of latitude are drawn in an east-west direction. Lines of longitude are drawn in a north-south direction. The intersection of these imaginary lines helps us find the location of places.

Latitude and Longitude

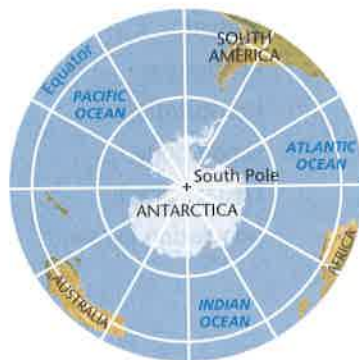


The illustration on the left shows lines of latitude. The north-south lines shown on the right are lines of longitude. Notice that lines of latitude are always the same distance apart.

NORTHERN HEMISPHERE



SOUTHERN HEMISPHERE



EASTERN HEMISPHERE



WESTERN HEMISPHERE



Lines of latitude measure distance north and south of the **equator**. The equator is an imaginary line that circles the globe halfway between Earth's North Pole and South Pole. Lines of latitude are also called **parallels**. This is because they are always parallel to the equator and each other. Lines of longitude are called **meridians**. They measure distance east and west of the **prime meridian**. This is an imaginary line drawn from the North Pole through Greenwich, England, to the South Pole. Parallels and meridians measure distances in **degrees**. The symbol for degrees is $^{\circ}$. Degrees are further divided into minutes, for which the symbol is $'$. There are 60 minutes in a degree.

As you can see on the globe on the previous page, parallels north of the equator are marked with an *N*. Those south of the equator are marked with an *S*. Lines of latitude range from 0° , for locations on the equator, to 90°N and 90°S , for locations at the North Pole and South Pole. Lines of longitude range from 0° on the prime meridian to 180° on a meridian in the mid-Pacific Ocean. Meridians west of the prime meridian to 180° are labeled with a *W*. Those east of the prime meridian are labeled with an *E*.

Hemispheres, Continents, and Oceans The globe's grid does more than help us locate places. Geographers also use those grid lines to organize the way we look at our world. For example, the equator divides the globe into two halves, or **hemispheres**. The half lying north of the equator is the Northern Hemisphere. The southern half is the Southern Hemisphere. The prime meridian and the 180° meridian divide the world into the Eastern Hemisphere and the Western Hemisphere. The prime meridian separates parts of Europe and Africa into two different hemispheres. To avoid this separation, some geographers divide the Eastern and Western Hemispheres in the Atlantic Ocean at 20°W . Doing so places all of Europe and Africa in the Eastern Hemisphere.

We can also organize our planet's land surface into seven large landmasses, called **continents**. There are seven continents: Africa, Antarctica, Asia, Australia, Europe, North America, and South America. Asia, the largest, is more than five times the size of Australia, the smallest. Landmasses smaller than continents and completely surrounded by water are called islands. Greenland is the world's largest island.

Geographers also organize Earth's water surface into separate areas. The largest area is the global ocean. Geographers further divide this ocean into four areas: the Atlantic Ocean, the Arctic Ocean, the Indian Ocean, and the Pacific Ocean. The Pacific is the largest ocean and the world's largest geographic feature. It is more than 12 times the size of the smallest ocean, the Arctic.

Smaller bodies of waters include seas, gulfs, and lakes. Gulfs and seas, such as the Gulf of Mexico and the Caribbean Sea, are areas of salt water that are connected to the larger oceans. Lakes are inland bodies of water. Although it is called a sea, the Caspian Sea in Asia is really the world's largest lake.

✓ SKILLS CHECK: *The World in Spatial Terms* What are some ways geographers organize our world?

INTERPRETING THE MAPS *In which hemispheres is the United States located? Which continents are located entirely within the Southern Hemisphere?*